

REMARKS

Applicant respectfully requests favorable reconsideration of this application in view of the foregoing amendments and following remarks.

Applicant notes with thanks that the Office has indicated that claims 3-9, 11-16, 19-25 and 27-32 are merely objected to and would be allowable if amended to independent form, as needed.

Applicant has amended the specification to correct further typographical errors noted by Applicant during its review of the specification while preparing this response. The amendments are self-explanatory and do not add new matter.

Only claims 1, 2, 10, 17, 18, and 26 are at issue, all other claims having been indicated as distinguishing over the prior art.

The Office has rejected independent claims 1 and 17 as anticipated by Ma under 35 U.S.C. §102(e). The Office further rejected claims 2 and 18 as obvious over Ma in view of Kim. Finally, The Office also rejected claims 10 and 26 as obvious over Ma in view of Szentesi.

In particular, the Office asserted that Ma teaches the three steps of independent claims 1 and 17 of (1) identifying a first set of virtual pipelines from which traffic exceeds a predetermined threshold; (2) for each virtual pipeline in each said set, determining the number of additional channels needed to cause said traffic through said pipeline to not exceed said predetermined threshold; and (3) for each pipeline in said first set, assigning a corrective action and an amount of corrective action taken in said peripheral networks as a function of said number of additional channels. The Office referred to Figures 7A, 7B, 9A, 9B, and 10 and column 8, lines 13-30, column 12, lines 60-65, and column 13, lines 42-50 as teaching the recited features.

With respect to claims 2 and 18, the Office acknowledged that Ma does not disclose that step 3 comprises assigning a call gapping rate for each such peripheral network contributing traffic to a pipeline for which traffic exceeds said predetermined threshold. However, the Office asserted that Kim discloses that step and that it would have been obvious to use call gapping as taught by Kim in Ma's system.

With respect to claims 10 and 26, the Office asserted that Szentesi discloses the rerouting of calls in the peripheral network and that it would have been obvious to use the rerouting of calls as taught by Szentesi in Ma.

A. The Present Invention

The present invention pertains to methods and apparatus for determining network congestion and relieving that congestion by rerouting calls in the peripheral networks and/or implementing call gapping in the peripheral networks (i.e., the networks that are inter-connected by the central network). In the particular embodiment described in the specification in connection with Figure 4, for example, a list is made of all of the congested virtual trunk groups (VTGs) of the central network, and for each congested VTG, a number of DSO channels, D, is determined, wherein D is the difference between the number of channels presently in the VTG and the number of channels that the VTG would need to have in order to bring the traffic in that VTG below a predetermined congestion threshold (steps 401-419 in Figure 4). Then, a second list of VTGs is created comprising each VTG for which there exists a path between the source and destination nodes of the congested VTG (steps 421-429). Then it is determined if there are any alternative sources of gateways between the source and destination nodes that can accommodate the overflow from the particular congested VTG (steps 433-435). If so, the necessary information, such as the identity of the alternate source of gateway node, the identity of the VTG, the peak cell rate (pcr) of the new path, and the fraction of calls from the VTG that should be rerouted in the personal networks is forwarded to the peripheral network for implementation (step 437).

B. Traversal of Prior Art Rejection

Applicant respectfully traverses the rejections of claims 1, 2, 10, 17, 18, and 26. Particularly, while Ma teaches a technique for network congestion control involving the determination of network congestion via various parameters

and taking corrective actions in response to detecting congestion, it does not teach “determining a number of additional channels needed to cause said traffic through said pipeline to not exceed said predetermined threshold” (claim 1, step 2). Ma does not disclose determining the amount of additional bandwidth needed to reduce the congestion below the threshold or even the amount of bandwidth that is, in fact, provided to a congested virtual path. Ma merely discloses that additional bandwidth is assigned responsive to congestion. In fact, if one had to conjecture as to the amount of bandwidth that Ma adds when it detects congestion, one would be led to believe that the amount of bandwidth added is a fixed amount regardless of the the level of congestion, thus suggesting that there is absolutely no reason to calculate an actual amount of bandwidth.

Particularly, Ma, in column 8, lines 12-40 discloses nothing more than that he determines whether the load on a virtual path exceeds a threshold, and, if so, that some unspecified block of bandwidth is added (see col. 8, lines 19-21 and 26-27. The specification of Ma refers to Figures 9A and 9B as disclosing the details of his system, but Figures 9A and 9B disclose nothing more regarding what amount of bandwidth is added. Specifically, the relevant steps of Figures 9A and 9B say nothing more than “REQUEST A BLOCK OF ADDITIONAL BANDWIDTH FROM THE ATM INTERFACE” and “REQUEST A BLOCK OF ADDITIONAL BANDWIDTH FROM THE VP GROUP”, respectively.

Accordingly, Ma does not teach step (2) which recites “for each virtual pipeline in said set, determining a number of additional channels needed to cause said traffic through said pipeline to not exceed said predetermined threshold”.

Hence, claim 1 clearly distinguishes over Ma.

Independent claim 17 substantively corresponds to claim 1 and thus distinguishes over Ma for exactly the same reason.

Hence, Applicant respectfully requests the Office to withdraw the rejection of claims 1 and 17 as anticipated by Ma.

The remaining rejected claims, i.e., claims 2, 18 and 26 are dependent claims that depend from either claim 1 or claim 17. The secondary references do not disclose the missing teachings discussed above in connection with Ma. Instead, those references have been cited for their alleged teachings of other limitations. Thus, presently rejected claims 2, 10, 18 and 26 distinguish over the proposed limitations exactly for the reasons given above in connection with claims 1 and 17 from which they depend.

As previously noted, the Office has already indicated that all other claims patentably distinguish over the prior art of record.

Conclusion

In view of the foregoing amendments and remarks, this application is now in condition for allowance. Applicant respectfully requests the Examiner to issue a Notice of Allowance at the earliest possible date. The Examiner is invited to contact Applicant's undersigned counsel by telephone call in order to further the prosecution of this case in any way.

Respectfully submitted,



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